

AMENDMENTS TO THE CLAIMS

1. (previously presented) A cover for an image sensor array, the cover comprising:

a plate formed of substantially transparent material and secured adjacent to an upper surface of and covering the image sensor array, said sensor array being sealed by said plate, said plate having a plurality of surfaces forming a lensing structure, such that at least one of said plurality of surfaces is contoured into a lensing surface capable of changing imaging characteristics; and

a mounting structure extending from an upper surface of the plate and adapted to secure a prefabricated lens system to the plate above the lensing structure.

2. (original) The cover of claim 1, wherein said plate is made of a transparent material which is one of glass, plastic, or plexiglass, said plate being transparent over all, or a substantial portion of, the image sensor array.

3. (original) The cover of claim 1, wherein said lensing structure is made of at least one lensing element, said lensing structure covering all or a substantial portion of the image sensor array, such that said at least one lensing element is formed on the lensing surface.

4. (original) The cover of claim 3, wherein said at least one lensing element is a refractive lensing element.

5. (original) The cover of claim 4, wherein said refractive lensing element includes a concave lens.

6. (original) The cover of claim 4, wherein said refractive lensing element includes a convex lens.

7. (withdrawn) The cover of claim 4, wherein said refractive lensing element forms a post having at least one lensing surface.

8. (withdrawn) The cover of claim 3, wherein said at least one lensing element is a diffractive lensing element, said diffractive lensing element blazed on the lensing surface.

9. (withdrawn) The cover of claim 3, wherein said at least one lensing element is a hybrid refractive-diffractive lensing element, said hybrid lensing element being formed with a diffraction grating blazed on the refractive lensing surface.

10. (canceled)

11. (previously presented) The cover of claim 1, wherein said lensing structure also includes an alignment mark, formed on the lensing surface, to guide the prefabricated lens system being attached to the plate.

12. (previously presented) The cover of claim 1, wherein said mounting structure is formed by a mesa-like protrusion on the lensing surface.

13. (previously presented) The cover of claim 1, wherein said mounting structure is formed by a ringed-wall structure having an inside wall and an outside wall, said ringed-wall structure formed on the lensing surface.

14. (previously presented) The cover of claim 13, further comprising a threaded retaining ring on the inside wall for attaching the prefabricated lens system to the plate.

15. (previously presented) The cover of claim 13, further comprising a threaded retaining ring on the outside wall for attaching the prefabricated lens system to the plate.

16. (original) The cover of claim 13, wherein said mounting structure is formed by a well-like depression on the lensing surface.

17. (previously presented) The cover of claim 16, further comprising a threaded retaining ring on the inside wall of the depression for attaching the prefabricated lens system to the plate.

Claims 18-25. (canceled)

26. (withdrawn) An image sensor camera system for converting optical data into digital image data, the system comprising:

an image sensor array having a plurality of sensors, said sensors operating to receive the optical data and integrate the data into electrical charge proportional to the amount of optical data collected with a particular period of time;

a lens system operatively coupled to the image sensor array and configured to carry and focus the optical data onto the image sensor array, said lens system including a plurality of lenses and a cover plate, said cover plate contoured into a lensing structure that changes an imaging characteristic;

a mounting structure extending from an upper surface of the cover plate and adapted to secure a prefabricated lens system to the cover plate above the plurality of lenses; and

sensor electronics coupled to the image sensor array, and configured to receive the electrical charge, the sensor electronics operating to convert the electrical charge received by the plurality of sensors into the digital image data.

27. (canceled)

28. (previously presented) A method of making an image sensor array having a lensing cover plate, the method comprising:

forming a lensing structure on a lensing surface of a flat, substantially transparent cover plate by contouring said lensing surface of the cover plate into a lensing element to form said lensing cover plate;

securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate above the lensing structure; and

covering an image sensor array with said lensing cover plate such that said image sensor array is sealed by said cover plate.

29. (withdrawn) The method of claim 28, wherein forming a lensing structure includes forming a diffraction grating on said lensing surface.

30. (canceled)

31. (original) The method of claim 28, wherein said lensing structure and said cover plate are injection molded as a single-piece structure.

Claims 32-51. (canceled)

52. (previously presented) A method of making a camera system, comprising:
contouring a portion of a flat cover plate to form a cover plate having a lensing structure;

securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate mounting above the lensing structure;

covering an imaging array with said cover plate, said cover plate being placed in an optical path of said camera system; and

bonding the cover plate to an assembly to seal the imaging array.

53. (previously presented) A method as in claim 52, wherein contouring the cover plate to form the lensing structure includes forming at least one of a refractive lens or a diffractive lens.

54. (previously presented) A method as in claim 52, wherein covering the imaging array with said cover plate includes locating said cover plate adjacent said imaging array.

55. (withdrawn) A method as in claim 52, further comprises locating at least one additional lensing element in said optical path of said camera.

56. (withdrawn) A method as in claim 55, wherein said at least one additional lensing element is mounted to said cover plate.

Claims 57-60. (canceled)

61. (new) The cover of claim 1, wherein the mounting structure extending from the upper surface of the plate is adapted to removably secure the prefabricated lens system to the plate above the lensing structure.

62. (new) The method of claim 28, wherein said mounting structure is adapted to removably connect the prefabricated lens system to the plate above the lensing structure.

63. (new) The method of claim 52, wherein said mounting structure is adapted to removably connect the prefabricated lens system to the plate mounting above the lensing structure.